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Amend + Reopen
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H. Pannell
PATENT
Atty. Docket No. INK-006
(2108/13)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Albert *et al.*

SERIAL NUMBER: 09/140,862

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EXAMINER: Lewis, D.

TITLE: Color Electrophoretic Displays

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Assistant Commissioner for Patents
Washington, D.C. 20231

AMENDMENT AND RESPONSE

Sir:

In response to the Office Action mailed December 8, 1999, for which the shortened statutory period of response is set to expire on March 8, 2000, Applicants respectfully submit this Amendment and Response. It is believed that no fee is due with the submission of this amendment and response. If this is incorrect, please charge the required fee to Deposit Account No. 20-0531.

REMARKS

Claims 1-10 are pending in the Application, and claims 1, 6 and 10 are independent claims. Claim 10 is rejected under 35 U.S.C. § 112, ¶ 2, as indefinite. Claim 6 is rejected under 35 U.S.C. § 102(a) as anticipated by U.S. Patent No. 5,650,872 to Saxe *et al.* ("Saxe"), claims 1-9 are rejected under 35 U.S.C. § 102(a) as anticipated by U.S. Patent No. 3,756,693 to Ota ("Ota"), claims 1-5 and 7-10 are rejected under 35 U.S.C. § 103(a) as obvious in view of Saxe, and claim 10 is rejected under 35 U.S.C. § 103(a) as obvious in view of Ota.

AMENDMENT

In the Claims:

In claim 10, at line 2, please insert --white-- between "one" and "particle".

RESPONSE

Rejection Under 35 U.S.C. §112, ¶ 2

Claim 10 has been rejected under 35 U.S.C. § 112, ¶ 2, as indefinite because claim 10 at line 13 recites "said white particle" without antecedent basis therefor. Applicants have amended claim 10 to provide antecedent basis for "said white particles." In view of this amendment set forth above, Applicants respectfully submit that independent claim 10 is definite and request reconsideration and withdrawal of the rejection of pending claim 10 under 35 U.S.C. § 112, ¶ 2.

Rejections Under 35 U.S.C. §102(a)

I. Saxe

Claim 6 is rejected under 35 U.S.C. § 102(a) as anticipated by Saxe. Claim 6 is novel. Claim 6 recites in relevant part a display "wherein application of a voltage potential to one of at least two electrodes causes said at least one particle to migrate within said capsule, causing said capsule to change its visual state." (emphasis added). Saxe does not disclose all elements of the claimed invention. Specifically, Saxe does not disclose particles that migrate in response to an electrical field.

Saxe discloses an electro-optical device comprising ultra-fine particles suspended in a liquid suspending medium. These particles are anisometric (*see, e.g.,* Saxe, col. 3, lines 57-59) and are located within droplets contained in a stationary position within a rigid polymeric film (*see, e.g.,* Saxe, col. 4, lines 22-26). Although the particles of Saxe respond to an electric field (*see, e.g.,* Saxe, col. 1, lines 15-50, col. 2, lines 55-67), they do not migrate as those of the present invention. Rather, the particles of Saxe reorient to become aligned in response to an electrical field. (*See, e.g.,* Saxe, col. 4, lines, 8-21, Figs. 3 and 4, item 21). As a result, Saxe

does not teach migration of particles in response to an electrical field as claimed by the present invention. Therefore, Saxe does not anticipate claim 6 of the present invention.

In view of the comments set forth above, Applicants respectfully submit that independent claim 6 is not anticipated by Saxe. Accordingly, reconsideration and withdrawal of the rejection of pending claim 6 under 35 U.S.C. § 102(a) as anticipated by Saxe is respectfully requested.

II. Ota

Claims 1-9 are rejected under 35 U.S.C. § 102(a) as anticipated by Ota. Claims 1-9 are novel. Independent claims 1 and 6 both recite "at least one capsule containing a suspending fluid and at least [one] particle...and at least two electrodes disposed adjacent [the] capsule." The plain language of claims 1 and 6 indicates that the capsule is a separate and distinct element from the electrodes. Ota does not disclose a capsule, but rather unencapsulated particles disposed between electrodes. As the Examiner recognizes, Ota discloses:

an electrophoretic suspension layer 2 enclosed in...housing walls 4 and 5..[t]he housing walls 4 and 5 have a first electrode 8 and second electrode 9 attached thereon, respectively[,][...]aid suspension layer 2...includes a dispersion of at least one electrophoretic material 6 in a finely divided powder form suspended in a colored suspending medium 7

(Ota, col. 2, lines 21-41, *see also* Figs. 1a, 2-6). However, Ota does not disclose a "capsule" that is separate and distinct from the electrodes because in Ota the electrodes themselves are the walls that enclose the electrophoretic material. As a result, Ota does not disclose "electrodes disposed adjacent [the] capsule" as both claims 1 and 6 of the present invention require. Therefore, Ota does not anticipate either claim 1 or claim 6 of the present invention.

In view of the comments set forth above, Applicants respectfully submit that independent claims 1 and 6 are not anticipated by Ota. Accordingly, reconsideration and withdrawal of the rejection of pending claims 1 and 6 under 35 U.S.C. § 102(a) as anticipated by Ota is respectfully requested. Consequently, Applicants further request reconsideration and withdrawal of the rejection of pending claims 2-5, and 7-9 under 35 U.S.C. § 102(a) as anticipated by Ota because each depends from either allowable base claim 1 or 6.

Rejections Under 35 U.S.C. §103(a)

I. Saxe

Claims 1-5 and 7-10 are rejected under 35 U.S.C. § 103(a) as obvious in view of Saxe. Independent claims 1, 6, and 10 are non-obvious; accordingly, the dependent claims thereof are non-obvious. As described above, Saxe discloses droplets contained in a stationary position within a rigid polymeric film. The unencapsulated droplets of Saxe contain anisometric particles that orient or align -but do not migrate- in response to an electric field. As the Examiner recognizes, by changing the particle reorientation or alignment the device of Saxe acts as a light-modulating unit or light valve. (*See*, Saxe, col. 2, lines 55-67, col. 4, lines 28-36). Further, Applicants do not contest, as the Examiner points out, that the light valve of Saxe "can comprise more than one type of particle." (Saxe, col. 13, lines 40-46). However, Applicants point out that the particles of Saxe are anisometric particles that do not migrate in response to an electrical field, but rather simply rotate or align themselves. As a result, the electrophoretic mobility of the particles of Saxe is irrelevant to the functioning of Saxe's light valve. Accordingly, Saxe does not disclose, teach or suggest, to one of ordinary skill in the art that electrophoretic mobility is even a relevant property of Saxe's particles.

In view of the comments set forth above, Applicants respectfully submit that independent claims 1, 6 and 10 are nonobvious in view of Saxe. Accordingly, reconsideration and withdrawal of the rejection of pending claims 1, 6 and 10 under 35 U.S.C. § 103(a) as obvious in view of Saxe is respectfully requested. Consequently, Applicants further request reconsideration and withdrawal of the rejection of pending claims 2-5, and 7-9 under 35 U.S.C. § 103(a) as obvious in view of Saxe because each depends from nonobvious base claim 1 or 6.

II. Ota

Claim 10 is rejected under 35 U.S.C. § 103(a) as obvious in view of Ota. Claim 10 is nonobvious. As described above, Ota does not disclose a capsule separate from the electrodes, but rather unencapsulated particles disposed between electrodes. Further, Ota does not disclose, teach, or suggest the use of a plurality of electrodes of differing colors as is set forth in claim 10

of the present invention. Rather, Ota discloses only color overlays, not colored electrodes. (*See, e.g.,* Ota Figs. 1a and 1b, item 50). The various color combinations discussed in column 3, lines 1 to 50, of Ota are simply variations on the basic theme of Fig. 1a that rely on variations in overlay 50, particles 6, and fluid 7. In fact, Ota teaches away from colored electrodes when he explicitly teaches that:

At any rate, any pattern can be displayed by providing a colored layer 50 of a desired pattern at the electrode 8 without using an electrode of a desired pattern.

(Ota, col. 3, lines 8-11)(emphasis added). Ota further teaches that the overlay 50 is not an electrode:

Electrical resistance of the colored layer 50 is important when [it] is interposed between the transparent electrode and the suspension layer...so that the electric field applied between the electrodes is imposed mainly across the suspension layer.

(Ota, col. 7, lines 35-47). Moreover, Ota teaches that the overlay is the opposite of an electrode: "The colored layer 50...may be electrically insulating." (Ota, col. 7, lines 47-49).

In view of the comments set forth above, Applicants respectfully submit that independent claim 10 is nonobvious in view of Ota. Accordingly, reconsideration and withdrawal of the rejection of pending claim 10 under 35 U.S.C. § 103(a) as obvious in view of Ota is respectfully requested.